

Remarks:

Reconsideration of the application is requested.

Claims 1-11 remain in the application. Claims 1-2, 4 and 6-10 have been amended.

In the section entitled "Claim Objections" on page 2 of the above-identified Office action, claim 6 has been objected to because of a formality. Appropriate correction has been made.

In the section entitled "Claim Rejections - 35 USC § 112" on page 2 of the above-identified Office action, claim 4 has been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

More specifically, the Examiner has stated that the limitation "providing the auxiliary substance to essentially include the reaction products" is confusing. The language of claim 4 has been amended to even more clearly define the invention of the instant application.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The above-noted changes to the claims are provided

solely for cosmetic and/or clarificatory reasons. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claims for any reason related to the statutory requirements for a patent.

In the section entitled "Claim Rejections - 35 USC § 102" on pages 2-3 of the above-mentioned Office action, claims 1-3 and 5-9 have been rejected as being anticipated by Vaartstra (US Pat. No. 6,159,855) under 35 U.S.C. § 102(e).

The rejection has been noted and claim 1 has been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found on page 12, lines 21-24 of the specification and original claim 7.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

setting a distance between the distributor plate and the substrate of less than 2 cm.

Vaartstra shows in its sole figure a shower head 40 above the substrate wafer 42. However, Vaartstra does not contain any hint with respect to the distance between the shower head 40 and the substrate wafer 42. From the drawing, a person

skilled in the art would conclude that the distance is at least substantially greater than 2 cm.

The advantage of the relatively small distance between the distributor plate and the substrate according to the invention of the instant application is that no appreciable back diffusion of the reaction products occurs, which ensures that the density of molecules over the substrate is spatially constant (see page 12, lines 13-21 of the specification of the instant application).

Clearly, Vaartstra does not show "setting a distance between the distributor plate and the substrate of less than 2 cm", as recited in claim 1 of the instant application.

Claim 1 is, therefore, believed to be patentable over Vaartstra and since claims 2-3 and 5-9 are ultimately dependent on claim 1, they are believed to be patentable as well.

In the section entitled "Claim Rejections - 35 USC § 103" on pages 3-4 of the above-mentioned Office action, claims 4, 10 and 11 have been rejected as being unpatentable over Vaartstra in view of Arvidson (US Pat. No. 5,118,485) under 35 U.S.C. § 103(a).

As discussed above, claim 1 is believed to be patentable over the art. Since claims 4, 10 and 11 are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-11 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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Marked-Up Version of the Amended Claims:

Claim 1(amended). A method of producing a crystalline solid-state layer by chemical vapor deposition, which comprises:

providing a reactor chamber with an interior space and a reactor wall having a first side formed with inlet openings communicating with the interior space and a second side;

[providing] mounting a substrate having a surface [in a reaction space] at the second side of the reaction wall in the interior space of the reactor chamber;

providing a distributor plate in the interior space of the reactor chamber;

setting a distance between the distributor plate and the substrate of less than 2 cm;

performing chemical vapor deposition by introducing[,] into the [reaction] interior space[,] starting gases containing elements of a solid-state layer to be deposited on the surface of the substrate and [introducing, into the reaction space,] at least one auxiliary substance through the inlet openings;
[and]

providing the auxiliary substance in a form containing molecules [which have] having a dipole moment and [which have] a property of briefly attaching themselves, during a deposition process, to the surface of the substrate with a dipole moment [that is] perpendicular to the surface of the substrate in order to dictate a crystal structure of the solid-state layer;

providing the reactor chamber with a gas outlet; and

pumping away reaction products through the gas outlet.

Claim 2(amended). The method according to claim 1, wherein the step of introducing the auxiliary substance includes feeding the auxiliary substance into the [reaction] interior space from an external supply source.

Claim 4(amended). The method according to claim 1, which comprises:

[pumping reaction products away from the reaction space during the chemical vapor deposition; and]

providing the auxiliary substance [to essentially include the] substantially from reaction products being pumped away from the interior space during the chemical vapor deposition.

Claim 6(amended). The method according to claim 5, which comprises providing the solid-state layer with a [Perowskite] Perovskite structure.

Claim 7(amended). The method according to claim 1, which comprises:

[providing the reaction space as an interior space of a reactor chamber;

providing a distributor plate in the interior space of the reactor chamber;

providing the reactor chamber with a reactor wall having a first side that is formed with inlet openings communicating with the interior space;

performing the step of introducing the starting gasses and the auxiliary substance by introducing the starting gasses and the auxiliary substance through the inlet openings;

providing the reactor wall with second side at which the substrate is mounted;

providing the reactor chamber with a gas outlet; and

pumping away reaction products through the gas outlet]

setting the distance between the distributor plate and the
substrate preferably at approximately 1 cm.

Claim 8(amended). The method according to claim [7] 1, which
comprises providing the distributor plate as a perforated
plate.

Claim 9(amended). The method according to claim [7] 1, which
comprises introducing a carrier gas through the inlet
openings.

Claim 10(amended). The method according to claim [7] 1, which
comprises:

providing the reactor chamber with a further gas outlet
opening formed in the reactor wall downstream of the
substrate; and

providing a connecting line connecting the gas outlet opening
to one of the inlet openings [that is] located downstream of
the distributor plate.